

DOCUMENT RESUME

ED 209 875

EC 140 392

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TITLE Current Mental Retardation Research in the Soviet Union.
PUB DATE Mar 81
NOTE 18p.; Paper presented at the Meeting of the EERA Convention (Philadelphia, PA, March, 1981).
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Associative Learning; Emotional Development; Foreign Countries; Genetics; *Learning Processes; Literature Reviews; Memory; Mental Retardation; Metabolism; Neurology; Problem Solving; Research Methodology; *Severe Mental Retardation; Theories
IDENTIFIERS *USSR

ABSTRACT

The paper consists of a review of 24 studies on mental retardation published in two Soviet journals between 1970 and 1980. An introductory section focuses on the theoretical framework for mental retardation research in the Soviet Union with a differentiation between oligophrenics (who have organic brain damage) and the intellectually backward (or mildly retarded). The studies are grouped as follows: those dealing with physical or neurological issues; genetic or metabolic aspects; memory, learning, and problem solving skills; and emotional/affective factors. It is noted that 10 of the studies are descriptive, nine experimental, and only five correlational. Findings which confirm experimental results in the United States include the following: a higher incidence of males than females among oligophrenic and seriously emotionally disturbed children, a higher percentage of oligophrenic mothers than fathers among children who are oligophrenic, and the presence of an associative clustering defect among oligophrenics. (DB)

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CURRENT MENTAL RETARDATION
RESEARCH IN THE SOVIET UNION

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Theoretical framework

For the precise understanding of the concept of mental retardation, as it is used in the Soviet Union, we should distinguish between generic terms and scientific terminology. Mentally retarded individuals are described in the Soviet Union either as "umstvenno otstaly" (Vlasova a. Pevzner, 1967), which is a generic concept and could be translated as "intellectually backward", or as oligophrenics (mentally deficient) in whom there is a definite evidence of neurological insult (Luria, 1960; Rubinstein, 1970; Pevzner, 1973). Rubinstein (1970) described as oligophrenic such children in whom visibly defective cognitive abilities are the result of organic brain damage. Since Soviet defectology does not acknowledge the use of standardized I.Q. tests for the purpose of quantitative assessment of intelligence, "umstvenno otstaly" as a group would compare to children described in the USA as mildly retarded of undifferentiated etiology. Consequently, oligophrenia, more precisely, would describe conditions within ranges of moderate to profound retardation.

To understand the precise meaning of the concept of oligophrenia we have to consider it within the framework of Pavlovian psychology which interprets cognitive and affective disorders within the continuum of CNS inhibition-excitation balance. Luria (1960) defined oligophrenia as "a profound mental underdevelopment which results from a massive cerebral

lesion experienced in the intrauterine period or in early childhood, and leading to a severe disturbance of the subsequent mental development of the child (p. 21)". Luria classified different types of oligophrenic conditions according to degree of intellectual retardation and clinical variety. As a matter of fact, Luria distinguishes between a "true" mentally deficient child in whom CNS impairment has occurred either prenatally or in infancy, and an individual who suffered such damage during early childhood. For the latter case, Soviet defectologists believe that CNS impairment has less serious effects and that the child is often able to compensate to some extent for his disability. Thus, he is not to be considered oligophrenic. For example, Rubinstein (1970) in his classification of exceptional children distinguishes between children oligophrenics and children who suffered damage of cortical areas of the brain during preschool or young school age.

According to Pevzner (1973) oligophrenia is characterized by lack of learning ability, primarily problem solving. She suggested five forms of oligophrenic: (a) oligophrenia associated with diffuse maldevelopment of the cortical hemispheres without serious neurological implications, (b) oligophrenia associated with cortical defects as well as with impaired perceptual abilities, (c) oligophrenia associated with various defects of auditory and visual-motor modalities, (d) oligophrenia associated with psychopathological behavior, (e) oligophrenia associated with the maldevelopment of frontal lobes. Pevzner's view that the pathogenic factors in oligophrenia are diffuse under-development or defects of the cortex leading to pathological inertia of the nervous process, has also been

emphasized by Biriukov and Savchenko (1973).

According to Soviet defectologists, oligophrenics are also characterized by disassociation between the first and second signaling system. As the result of the under-developed verbal communication, the oligophrenic child is limited in the process of abstraction and generalization and orients himself to the external world primarily at a concrete level.

Luria's theories of mediational deficit in oligophrenics received considerable attention in the USA (Milgram & Furth, 1963; Rieber, 1964; Balla & Zigler, 1964; Zigler & Balla, 1971; Borkowski & Wanschura, 1974). Some of these studies were providing supportive (Milgram & Furth, 1963; Rieber, 1964), other contradictory (Balla & Zigler, 1964; Zigler & Balla, 1971) evidence.

Review of the literature

For this paper the writer reviewed studies on mental retardation published between 1970 and 1980, in the Defectologia (Defectology; an official publication of the Academy of Pedagogical Sciences of the USSR, devoted to the study of exceptional children) and in Voprosy Psikhologii (Problems of Psychology). Twenty-four studies that are reviewed in this paper in all probability do not represent everything that has been published in the Soviet Union on mental retardation in the past decade. Nevertheless, some general trends will be possible to identify.

In order to facilitate review of the material, the studies under discussion could be grouped as follows: (a) those dealing with physical or neurological issues, 8; (b) genetic or metabolic, 5, (c) memory, learning and problem solving, 5; (d) communication disorders, 2; (e) emotional, 4.

Table 1 presents summary of the studies by the area and type of the study.

Table 1

Area and type of the study

<u>Area</u>	<u>N</u>	<u>Experimental</u>	<u>Correlational</u>	<u>Descriptive</u>
Physical or neurological	8	3	1	4
Genetic or metabolic	5	2	1	2
Memory & learning	5	3	2	-
Communication disorders	2	1	-	1
Emotional disturbance	4	-	1	3
	24	9	5	10

As can be seen from the table, most of the studies are of descriptive or experimental nature. Only five studies can be classified as correlational. It is beyond the scope of this paper to express any judgment as to the quality of the studies. However, it should be pointed out that there are considerable variations in the style of individual studies. For example, many studies do not provide references at all, some use the footnote style while others use a style similar to APA.

Among the 24 studies, there were a total of 72 references (48 Russian and 24 English speaking sources). Most of the English references were of the late 1960's - early 1970's.

Physical and neurological issues

Bebrish (1976) conducted a study with 356 youngsters, CA 7-14, designed to determine certain characteristics of physical development in mentally retarded youngsters and based upon the findings of the study to develop recommendations for therapeutic efforts. Results of the study revealed that: (a) on tasks that involved speed and coordination mentally retarded

children were inferior to children of average intelligence, (b) there was no difference between mentally retarded and non-retarded on tasks involving physical strength, (c) mentally retarded swimmers were less different from children of average intelligence in all aspects of physical development than mentally retarded non-swimmers.

Medviedova (1978), using a sample of 130 oligophrenic children, CA 1 to 16, attempted to correlate dental anomalies with oligophrenia. Her study concluded that dental anomalies are not usually associated with oligophrenia.

Demidov (1973) reported a clinical evaluation of 537 Down's syndrome children (312 males and 225 females). The writer reported a high incidence of congenital heart defects in this population, (86 among males and 62 among females). Demidov also pointed out that only in 6.6% of this sample the heart defect was the primary reason of death. Among the 134 Down's syndrome children who died, pneumonia accounted for 89 deaths.

A peculiar form of dermatitis associated with oligophrenia was described by Meyerova (1974). Two families were described. In the "X" family, the mother suffered from a maniac-depressive psychosis. However, she did not manifest any signs of organicity or oligophrenia. The father was oligophrenic. There were twelve children in the family of whom three died in infancy, four were healthy and five suffered from xerodermia. In the "Y" family, the mother was mildly retarded, but the father was healthy. There were four children in the family, two healthy and two suffering from xerodermia. In both families early development of children was normal until three or four years of age. From four years of age, every spring ulcerated spots appeared on soles and palms and lasted until August. At times the pain associated with ulcers was

excruciating. The children were emotionally unstable as well as severely and profoundly retarded. Meyerova suggested that this illness can be traced to a specific recessive trait.

Berashnev, Baryshnikova, Guseva, and Semiachkina (1976) suggested that the least researched aspect of Morfan's syndrome has been the functioning of the CNS. Their results were based upon data collected on 37 cases of Morfan's syndrome (14 males and 23 females) examined at the department of clinical genetics and child surgery in Moscow. All patients revealed three clusters of symptoms; bone structure defects, visual defects and congenital heart problems. This study revealed a high correlation between physical symptoms of Morfan's syndrome and the level of mental retardation. The majority of children studied had intellectual defects and almost 50% had personality and emotional problems. It should be pointed out that psychological observations correlated significantly with EEG data.

Pevzner, Bertyn and Mareyeva (1980) investigated clinical and educational correlates in mentally retarded children with profound visual and auditory disorders. Results of this study were based upon investigation of 140 children of pre-school and elementary school age. Among the 140 deaf-blind, 47 were found to be mentally retarded. It is of interest that among 47 retarded youngsters 30 were male and 17 were females; a 2:1 male to female ratio as reported in many studies. The writers speculated that in the cases of deaf-blind oligophrenics, the defect in all probability occurred during the first trimester of pregnancy when differentiation of the nervous system takes place. Underdevelopment of language, typical for deaf, further depresses low intellectual functioning. Impairment of vision influences negatively the

whole sensory-motor system.

EEG studies of oligophrenics were reported by Zizlina and Novikova (1973). Analysis of EEG printouts was done on mildly defective oligophrenics of endogenous, exogenous, chromosomal, and "mixed" etiology. Only minimum EEG deviation was observed in the endogenous group. However, among those of exogenous and mixed etiology gross deviations of the electrical activity of the cortex and subcortical structures were in evidence.

In a related study, Markovskaya (1978) reported that signs of organic damage to the CNS were found in the EEG's of 51% of the children with delayed mental development. In most youngsters under study dysfunction of the frontal structure of the brain was noted. Markovskaya concluded that the disorders of intellectual activity and the severity of emotional disorders in the various forms of DMD are contingent on how extensive and intensive is the damage to the brain as a whole, but also depends largely on the degree of maturity and extent to which the major functions of the frontal structures of the brain are intact.

Genetic studies

To study concordance for oligophrenia among twins, Bertyn (1973) surveyed 32 auxiliary schools and identified 50 pairs of MZ and 93 pairs of DZ twins. Some of the more interesting findings were the following: (a) in all 50 MZ pairs both twins were oligophrenic, while 32 of 93 DZ pairs were discordant on oligophrenia, (b) 92% of MZ and 46% of DZ twins were concordant on the structure of oligophrenia; (c) in all 143 families there were 50.3% of oligophrenic mothers and 21.6% of oligophrenic fathers. Bertyn (1973) concluded that the lower occurrence rate and less frequent concordance

in non-twin siblings as compared with MZ and DZ twins suggests the importance of multiple genetic factors in oligophrenia.

Blumina (1980) in her report on phenylketonuria identified three clinical types: (a) PKU with dementia; (b) schizopernia-like PKU; (c) neurotic-like. She also reported incidence among newborn ranging from 1 in 5,000 to 1 in 10,000. Treatment of childhood phenylketonuria began in the USSR in 1964. For comparison, the first successful treatment of a phenylketonuric neonate has been described in the United States in early 1950's. (Woolf, 1970).

Rayskaya (1976) reported on the results of an extensive survey involving 3000 neonates in Moscow and conducted by the Institute of Medical Genetics of the Academy of Medical Sciences. The survey revealed twenty cases of sex chromosome abnormalities, seventeen of Turners, and three of Klinefelters variety. Among subjects with Turner's syndrome the following characteristics were noted: (a) mild mental retardation with disturbances of special perception and visual-motor coordination; (b) psychological infantilism; (c) gross facial dysplasticity. In a similar study Lebedinskaya, Grinberg, Rayskaya and Malinauskene (1978) reported on the association between the number of X chromosomes and the severity of mental retardation. In cases with XXY chromosomes mild retardation was found in 50%, those with XXXY were retarded in 75%, and in cases of XYY severe retardation was frequently encountered.

Akinschikova, Yeremeyeva, Verlinskaya and Tysiachniuk (1976) analysed WISC protocols of twenty Turner's syndrome children, twenty Klinefelters syndrome and six with trisomy of chromosome X. In Turner's syndrome children,

verbal intelligence was within average range, however results on the performance subtests were below average. Among youngsters with Klinefelters syndrome both Verbal and Performance I.Q.'s were within range of average intelligence. In youngsters with trisomy of chromosome X, poor level of information, narrow range of interest, poor memory, as well as very narrow potential for abstract and logical thinking were in evidence.

Learning and Memory

Research by Peresleni and Sagdulayev (1975) based upon a sample of 84 youngsters attending an auxiliary school in Moscow, confirmed a well known assumption that actual grade placement did not influence comprehension of mentally retarded children. Regardless of the grade placement, mentally retarded children were found to be inferior to normal children in comprehension.

An interesting method to study deductive reasoning in children of an auxiliary school has been described by Blinova (1975). The sample consisted of 230 youngsters diagnosed as mentally retarded. The children were presented a picture of Spring and asked to describe it and indicate what season of the year the picture illustrated. In order to explain their response, the children were required to identify the most appropriate characteristics of the picture. The task of the examiner was to determine deductive reasoning by asking probing questions such as: "It does not look like Spring to me"; "It could be a warm Winter day"; or "It could be a late Fall". Blinova reported that in contrast to children of average intelligence, mentally retarded children are very suggestable. For example, preschoolers of average intelligence (10% at 4 CA and 70% at 6 CA) have a tendency to persist in their arguments while most mentally retarded children even at 12 years of age

were easily persuaded by the examiner. In contrast to normal children, mentally retarded children could not easily separate essential from non-essential characteristics.

A study investigating eye movements in the oligophrenics during the process of reading has been conducted by Karpova, Karpov and Isayev (1977). The study involved 14 oligophrenic children, CA 8-12. The investigators stressed an obvious fact that in oligophrenic children difficulty in reading is not only an educational, but also a social problem. Of more interest is their suggestion that dyslexia which is observed among oligophrenics cannot be explained only in terms of intellectual inadequacy. Utilizing psychological and EEG data, Karpova et al. maintain that in oligophrenics dyslexia is associated with under-development of functional systems responsible for orientation in space as well as visual-motor coordination. Their data revealed that oligophrenics manifested more eye fixation and more movement per 100 words per minute than children of average intelligence.

Recall and memory studies were reported by Youodraitis (1980), as well as Soloviov and Sumarkova (1973). Youodraitis (1980) investigated recall of incidentally learned verbal material in mentally retarded school children. The sample for this study included 100 mentally retarded youngsters from the 5th and 7th grades of an auxiliary school, and a control sample of youngsters from a regular public school. The children were asked to copy twenty words in random presentation. Words could be grouped into four classes of five words each. Recall task consisted of three situations: (a) immediately after copying; (b) 30 minutes later; (c) one week later. Statistically significant difference at the probability level of $p < .01$ was obtained

between control and the mentally retarded group when tested immediately and thirty minutes later. When tested one week later, the difference between groups was at the probability level of $p < .001$. Pupils of the control grouped randomized words into classes more frequently and more effectively than youngsters in auxiliary school. Mentally retarded children as a rule were unable to cluster words into classes. This finding confirms previously done research in the United States (Evans, 1964; Gergouy & Spitz, 1966; Bilsky, Evans, & Gilbert, 1972) and in Australia (Dougherty, 1977).

Soloviov and Sumarkova (1973) reported on memory selectivity in mentally retarded children. They suggested that mentally retarded children have a tendency to introduce into recall factors that do not correspond with mnemonic tasks. Three groups of twenty children each constituted the research sample. They included twenty moderately retarded children and twenty of average intelligence. The objective of the study was to test short-term memory as well as the amount of material remembered. Two tasks were employed: (a) presentation of six rows of single words, (b) presentation of a brief story numbering ten words. The study revealed that across the groups children remembered more words in the story than when presented individually. Also the number of words remembered increased with the increase in intelligence.

Communication disorders

Two studies (Maller, 1973; Savchenko & Yurova, 1976) were found which discussed communication disorders among mentally retarded children. Maller (1973) investigated use of prepositions and comprehension by profoundly retarded school children. The purpose of this study was to

ascertain the extent to which severely and profoundly retarded children can comprehend such prepositions as: "on", "in", "under", "over", "nearby". The sample in this study consisted of twenty severely retarded youngsters, CA 10-15. The preposition "in" was recognized correctly by 61%. In 35% of the cases the preposition "in" was confused with the preposition "on". The concept "over" was found to be more abstract and complex than the concept of "under".

Savchenko and Yurova (1976) reported on pronunciation disorders in 589 mentally retarded youngsters of whom 286 were tested during 1965/67 school years and 303 during 1974/75 school year. 253 (43%) manifested pronunciation disorders and 67 (11%) other types of special disorders. The writers claim that in comparison to 1965/67 school years, there were fewer children in 1974/75 school year manifesting pronunciation disorders.

Emotional Factors

Few studies are found in Soviet defectological literature which describe affective domain of the mentally retarded youngster and adolescents. Some of the more typical will be briefly reviewed in this paper.

In her study, Poperechnaya (1973) described a group of 36 adolescents with various types and degrees of psychopathology. They have not been diagnosed previously as oligophrenics and attended normal school. All of them were mildly retarded. She concluded that in many instances their adolescent adjustment reactions were secondary to mental retardation and inability to cope with normal school demands.

In a related study, Kuzmina (1975) pointed out that success of social and vocational adjustment of the mentally retarded depends to

a considerable extent upon status of emotional adjustment of the mentally retarded. She further indicated that the relationship of oligophrenia to psychopathology, as well as oligophrenia and functional-dynamic impairment of the CNS has not been as of yet adequately researched.

An interesting study, since it mentions the use of TAT in the Soviet Union, has been discussed by Albrecht (1976). He described the use of Thematic Apperception Test with a group of adolescent oligophrenics. Among the group of 88 oligophrenics, 20 were described as manifesting neurotic behavior problems, 20 were hyperactive, and 48 revealed various other psychopathological behaviors. Albrecht concluded that TAT is a useful instrument which corroborates clinical impressions.

Yavkin (1980) observed 301 adolescent oligophrenics over the period of ten years. Within this group, 55 were diagnosed as oligophrenics with psychotic-like disorders. Table II below presents the breakdown according to age and sex.

Table II

Age and sex of psychotic-like oligophrenics.

<u>CA</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
7-10	-	1	1
11-14	15	12	27
15-18	14	3	17
>18	9	1	10
	<u>38</u>	<u>17</u>	<u>55</u>

As the distribution indicates, most psychotic-like oligophrenics in this sample are between eleven and eighteen years of age. Of more interest is the ratio of males to females, (2:1), which corresponds to the findings of many studies in the USA.

General Impressions

From the review of the literature described above few general impressions could be obtained. Some findings indicate trends known in the USA. They are of interest since the children examined in the Soviet Union live in an environment which is culturally, linguistically and socially different from that in the USA.

Those findings are:

(a) More males than females among oligophrenic and seriously emotionally disturbed children (Demidov, 1973; Pevzner, Bertyn, Mareyeva, 1980; Yavkin, 1980).

(b) Higher percentage of oligophrenic mothers than fathers among children who are oligophrenic (Bertyn, 1973).

(c) Associative clustering defect among oligophrenics (Youodraitis, 1980).

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